

REMARKS

By telephonic communication of 14 October 2002, the Examiner notified the applicant of entry of the restriction requirement in the above-identified patent application. The Applicant provisionally elected claims 1-14 of the invention of Group I for continued prosecution in this application. The undersigned hereby affirms the provisional election to continue with prosecution of the claims of Group I and the withdrawal, from further consideration, in this application, of the claims 15-20 of the invention of Group II.

In the above-mentioned Office Action, all of the still-pending claims, claims 1-14, were rejected. Claims 1-6, 9-10, and 13-14 were rejected under Section 103(a) over the combination of Shingo and Hikami. Claims 7-8 were rejected under Section 103(a) over the combination of Shingo, Hikami, and Kile. And, claims 11-12 were rejected under Section 103(a) over the combination of Shingo, Hikami, and Fanning.

Additionally, claims 1-14 were rejected under Section 112, second paragraph. Claim 1 was rejected for the recitation of 'facilitating maintenance of connection of electronic circuit component.' And, claims 1-14 were rejected for lacking clarity as to whether the substrate is claimed.

Responsive to the substantive rejection of the claims, independent claim 1 is amended, as noted herein, in manners believed to recite more clearly the invention of the present application over the cited references, taken in any combination.

Neither Shingo nor Hikami, alone or in any combination, discloses a connector, as now recited in the independent claim. Shingo was cited for showing a first pin member of a first configuration and reshaped into a second configuration to facilitate connection to a circuit board. The Examiner acknowledged that Shingo fails to disclose reconfiguration performed by heating.
5 Hikami was cited for showing a connector member having a shape memory recovery characteristic.

The connector disclosed in the various embodiments of the Hikami reference appear all to be embodied in a housing to provide a mechanism by which to form connections with contacts formed on a circuit board or electronic part. The disclosed connectors do not form portions of the circuit board or electronic part.

10 As-amended, claim 1 of the present application recites a connector for an electronic circuit component that includes a pin member that is affixed to, and forms a part of, the electronic circuit component. Also, the connector shown in Hakami fails to disclose a structure in which, when in a memory configuration, a pin member exerts clutching forces to cause flexing engagement of the pin member to a substrate.

15 Both Hakami and Shingo, therefore, fail to disclose such a connector having the pin member of the structure, as now-recited. And, the other references cited against the claims also do not appear to disclose such structure or method.

Accordingly, no combination of the cited references can be formed to create the invention, as now-recited in claim 1. And, as the dependent claims include all of the limitations
20 of their respective parent claims, these claims also are believed to be distinguishable over the

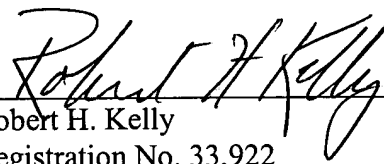
cited references, taken alone or in combination, for the same reasons as those given with respect to their parent claims.

Additional amendments are made to claim 1 and to the remaining ones of the dependent claims³ to overcome the Section 112, second paragraph rejections of the claims 3-4. The recitation of 'facilitating connection of' is deleted from the preamble portion of claim 1. And, the remaining ones of the dependent claims are placed in conventional Jepson form, in manners believed to make clear the positively recited elements of the dependent claims.

In light of the foregoing, independent claim 1, and the dependent claims dependent thereon, as now-amended, are believed to be in condition for allowance. Accordingly, re-examination and reconsideration for allowance of the claims is respectfully requested. Such early action is earnestly solicited.

Respectfully submitted,

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APPENDIX A

Amended claims, marked to show changes:

1. (Amended) In an electronic circuit component positionable upon a substrate and electronically connectable thereto the substrate defining a seating surface for receiving the electronic circuit in seating engagement thereon, the seating surface having at least a first indent coated with an electrically conductive material, an improvement of a connector for [facilitating
5 connection of] electrically connecting the [electronical] electronic circuit component in affixed engagement with [to] the substrate, said connector comprising:

at least a first pin member affixed to the electrical circuit component to form a portion thereof, said first pin member of an electrically-conductive material that exhibits physical-memory characteristics, [affixed to extend downwardly beneath a bottom surface of the
10 electronic circuit component, thereby to engage with the substrate when the electronic circuit component is seated upon the substrate, said first pin member of a first configuration when at a first temperature and of a second configuration when heated to at least a second temperature, said first pin member remaining in the second configuration subsequent to heating thereof to at least the second temperature, the second configuration into which said first pin member is
15 configurable facilitating maintenance of connection of the electronic circuit component upon the substrate] said first pin member positionable at least alternately in a first configuration and a memory configuration, said first pin member extending into the first indent when the electronic circuit is seated upon the seating surface and said first pin member is molded in the first configuration, said first pin member reconfigured into the memory configuration responsive to
20 heating to a deformation threshold temperature such that, when positioned in the memory

configuration, first clutching forces exerted by said first pin member cause flexing engagement of said first pin member with the electrically conductive material coating the first indent.

3. (Amended) [The connector] In the electronic circuit component of claim 1 [2]

5 wherein the at least the first indent comprises the first indent and at least a second indent, the improvement of the connector, said connector further comprising [and wherein said at least the first pin member comprises said first pin member and] at least a second pin member, said first pin member extending into the first indent and said second pin member extending into the second indent when the electronic circuit component is sealed at the seating surface.

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4. (Amended) [The connector] In the electronic circuit component of claim 3 [2],
the improvement of the connector, and wherein said second pin member is also
positionable at least alternately in the first configuration and the memory configuration,
said second pin member molded in the first configuration when the electronic circuit is
5 seated upon the seating surface, said second pin member reconfigured into the memory
configuration responsive to heating to a deformation threshold temperature such that,
when positioned in the memory configuration second clutching forces exerted by said
second pin member cause flexing engagement of said second pin member with
electrically conductive material coating the second indent[, when the electronic circuit
10 component is seated upon the seating surface, said first pin member exerts a first
clutching force at the first indent and said second pin member exerts a second clutching
force at the second indent subsequent to heating to the at least the second temperature].

5. (Amended) [The connector] In the electronic circuit component of claim 4, the
improvement of the connector and wherein said first pin member is affixed to extend
15 beneath a first side edge of the electronic circuit component, wherein said second pin
member is affixed to extend beneath a second said edge of the electronic circuit
component, and wherein the first clutching force and the second clutching force are
exerted in opposing directions.

7. (Amended) [The connector] In the electronic circuit component of claim 1, the improvement of the connector, and wherein said first pin member comprises an elongated camber-leg which exhibits a cambered-configuration when configured in the [second] memory configuration.

5 8. (Amended) [The connector] In the electronic circuit component of claim 7, the improvement of the connector, and wherein the elongated camber-leg forming said first pin member exhibits an amount of camber when configured in the [second] memory configuration greater than when the elongated camber-leg forming said first pin member is configured in the first configuration.

10 9. (Amended) [The connector] In the electronic circuit component of claim 1 wherein the at least the first indent formed in the substrate [defines a seating surface for seating of the electronic circuit component thereon, the substrate having at least] is defined by a first through hole formed to extend therethrough, the improvement of the connector and wherein said first pin member extends through the first through hole when
15 the electronic circuit component is seated at the seating surface.

10. (Amended) [The connector] In the electronic circuit of claim 9, the improvement of the connector and wherein said first pin member defines a proximal side portion affixed to the electronic circuit component and a distal side portion extending beyond the substrate when the electronic circuit component is seated upon the substrate.

5 11. (Amended) [The connector] In the electronic circuit component of claim 10, a further improvement of the connector and wherein said first pin member further comprises a foot piece positionable to abut against a bottom face surface of the substrate when said first pin member is configured in the [second] memory configuration and the electronic circuit component is seated upon the seating surface, thereby to prevent
10 removal of the electronic circuit component out of the seating surface.

12. (Amended) [The connector] In the electronic circuit component of claim 11 [wherein the first through hole is of diametrical dimensions permitting translation therethrough of said first pin member, and the foot-piece formed at the distal side portion thereof,] the improvement of the connector and wherein, when the electronic component is seated upon the seating surface, said
5 first pin member extends through the first through hole when said first pin member is configured in the first configuration, [and] said first pin member [is] of diametrical dimensions preventing translation of said first pin member out of the first through hole subsequent to positioning of the electronic circuit component upon the seating surface and configuring said first pin member into the [second] memory configuration.